

APRIL/MAY 2025

CBT51/FBT51 — GENETIC ENGINEERING

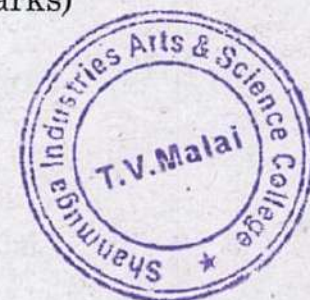
Time : Three hours

Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What are sticky ends?
2. Summarize the role of DNA ligase.
3. What are cloning vectors?
4. Summarise about copy number of plasmids.
5. Who discovered PCR?
6. Relate the role of PCR in genetic engineering.
7. Why is DNA Sequencing important?
8. Infer about molecular markers.
9. what is DNA fingerprinting?
10. What is recombinant HGH?



SECTION B — ($5 \times 5 = 25$ marks)

Answer ALL questions.

11. (a) Explain about polynucleotide kinase.

Or

- (b) Make use of DNA polymerase and explain its role in genetic engineering.

12. (a) Explain the construction of $pBR 322$.

Or

- (b) List the characteristic features of vectors.

13. (a) List the applications of PCR.

Or

- (b) Categorize the types of PCR.

14. (a) Identify the procedure and applications of RAPD.

Or

- (b) Analyze the components of DNA barcoding.

15. (a) Write notes on production of recombinant insulin by making use of F coil.

Or

- (b) Organize the procedure to establish gene library.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain in detail about restriction endonuclease and its types.

17. What is *Agrobacterium tumefaciens*? Appraise about the structure of Ti plasmid with a neatly labelled diagram.

18. Explain the steps involved in PCR amplification.

19. Discuss about the Sequencing of DNA by Sanger chain termination method.

20. Elaborate on the principle, procedure of DNA fingerprinting.

